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**Castano et al.**

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(54) **HIGH-SPEED SUPERCAVITATING  
UNDERWATER VEHICLE**

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(57) **ABSTRACT**

A high-speed supercavitating underwater vehicle includes an elongated hull of circular cross section, the hull having a cavitator at a forward end thereof and means for ventilating gas to form a cavity around the hull in underwater travel. An expandable annular skirt is fixed on the hull and is provided with an outer surface proximate an outer surface of the hull. The skirt is expandable to increase a diameter of the skirt from proximate a diameter of the hull to proximate a diameter of the cavity to define an annular gas film between the expanded skirt and a boundary of the cavity. The expanded skirt acts to substantially reduce the flow of gas from a forward high pressure zone of gas to an after low pressure zone of gas.

9 Claims, 5 Drawing Sheets

